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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/597,889

Applicant(s)

LENZARINI, DAVIDE

Examiner

KUO WOO

Art Unit

4133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 61-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 61-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date 8/10/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the claims

1. Claims 1-60 have been cancelled. Claims 61-78 are currently pending in this office action.

Specification

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Page 44, lines 28-30, When the CNAPT module receives the SNAPT module acknowledge, it has to (Figure 25) : (CNAPT-12) Send a----SNAPT.(CNAPT-13), wherein the module and element were not illustrated in the Figure 25 and on any other related figures.

Drawings

4. The informal drawings (Figures 1-4 and 33-36) are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement

sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

5. The drawings (Figures 1-4 and 22-36) are objected to under 37 CFR 1.83(a) because they fail to show feature of the invention as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining

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figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. Figures (1-4 and 35-36) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawing (Fig.36) is objected to because duplication of Fig. 36 listed in page 32 and 33. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate

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figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 61, 62 and 69-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent Application Number 2005/0176429 A1) in view of admitted prior art state on page 5, lines 13-34 of the instant application.

As to claim 61, "A method for seamless handover of mobile devices in heterogeneous networks in which method a mobile device or the mobile network to which it belongs is moved between different topological network locations and transmits and/or receives data by means of one or

more network access technologies without the data transfer between at least one OSI Layer 7 Client IP application, running on the mobile device, and at least one OSI Layer 7 Server IP application, running on an Internet server, being interrupted, the method comprising the steps of:

Requesting, by the at least one Client IP application, the sending of one or more first data units to an OSI Layer 7 client-service module, the one or more first data units containing a client payload and a first set of headers and/or footers for each OSI Layer traversed to reach the client-service module", Lee discloses (Paragraph 0053, FIG. 9 is a message flow diagram illustrating a procedure for updating a mapping table when a mobile node attempts handoff to a new access node. Referring to FIG. 9, when a mobile node determines a handoff to a new access node, the mobile node transmits a handoff request message to a new access node), wherein mobile device MN send request to access node and neighbor server as Server. According to mapping table data units sends request from node to node until reaching the designation;

"Creating, by the client-service module, one or more second data units and sends it or them to at least one OSI Layer 7 server-service module, the one or more second data units containing the client payload and a second set of headers and/or footers for each OSI Layer traversed to reach the at least one server-service module", Lee discloses (Paragraph 0053, FIG9), According to mapping table data units sends request from node to node until reaching the Server-service module;

"Creating, by the at least one server-service module, one or more third data units and sends it or them to the at least one Server IP application, the one or more third data units containing the client payload and a third set of headers and/or footers for each OSI Layer traversed to reach the at least one Server IP application", Lee discloses (Paragraph 0053, FIG9), According to mapping table data units sends request from node to node until reaching the Server.

However, Lee does not explicitly teach how each data unit is traversed to next node. According to admitted prior art, instant application discloses in background of invention (the communication between layers higher than layer one is logical; the only hardware connection is at the physical layer. Thus in order for a protocol to communicate, it must pass down its PDU to the next lower layer for transmission. In the OSI terminology, preceding the SDU with its own header and appending footers as necessary. This process is called data encapsulation, because the entire contents of the higher-layer message are encapsulated as the data payload of the message at the lower layer.... In the theoretical model, what you end up with is a message at layer 1 that consists of application-layer data that is encapsulated with headers and /or footers from each of layers 7 through 2 in turn), herein data encapsulation process through layer PDU and N-1 layer SDU with headers and/or footers are same as client-service module, server-service module and reaching to Service IP application.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee' teaching in invention of admitted prior art data encapsulation method for a seamless handover solution using a pair of applications which re-route data without any modification of OSI protocol stack and without any modification of the Client and Server applications source code (see Page 18, lines 19-22).

As to claim 62, "the method according to claim 61, wherein the at least one Server IP application makes a reply sending one or more fourth data units to the server-service module, the one or more fourth data units containing a server payload and a fourth set of headers and/or footers for each OSI Layer traversed to reach the server-service module", Lee discloses (Paragraph 0053, Referring to Fig 9, A handoff response message is transmitted from the access node to the MN. If the handoff response message is received from the new access node in response to the handoff request message, the mobile node transmits a neighbor graph request message including information on the new access node to a neighbor graph server. Upon receiving the neighbor graph request message, the neighbor graph server maps the mobile node to a neighbor graph including the new access node and corresponding to a service level requested by the mobile node, and transmits the newly mapped neighbor graph to the mobile node), wherein access node send connection response to mobile device MN . Neighbor Server, update mapping table and sends back to mobile unit;

"the server-service module creates one or more fifth data units and sends it or them to the client-service module, the one or more fifth data units containing the server payload and a fifth set of headers and/or footers for each OSI Layer traversed to reach the client-service module", Lee discloses (Paragraph 0053, Referring to Fig 9), wherein access node send connection response to mobile device MN. Neighbor Server, update mapping table and sends back to mobile unit;

"the client-service module creates one or more sixth data units and sends it or them to the at least one Client IP application, the sixth data units containing the server payload and a sixth set of headers and/or footers for each OSI Layer traversed to reach the at least one Client IP application" Lee discloses (Paragraph 0053, Referring to Fig 9), wherein access node send connection response to mobile device MN. Neighbor Server, update mapping table and sends back to mobile unit.

However, Lee does not explicitly teach how each data unit is traversed to next node. A instant application discloses in background of invention discloses in background of invention (In the theoretical model, what you end up with is a message at layer 1 that consists of application-layer data that is encapsulated with headers and /or footers from each of layers 7 through 2 in turn), wherein server IP application response back to Client IP application.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee and teaching in

invention of admitted prior art data encapsulation method for a seamless handover solution using a pair of applications which re-route data without any modification of OSI protocol stack and without any modification of the Client and Server applications source code (see Page 18, lines 19-22).

As to claim 69, "the method according to claim 61, wherein a plurality of Client IP applications resident on one or more mobile devices is connected simultaneously to the same client-service module" Lee discloses (Paragraph 43, FIG. 4 is a diagram illustrating a procedure for updating a neighbor graph in a mobility management method according to a preferred embodiment of the present invention. As illustrated in FIG. 4, access nodes 110, 120, 160, 170 and 180 providing various services in their service areas are connected to a neighbor graph server 400 via an IP network. The access nodes 110, 120, 160, 170 and 180 provide services requested by mobile nodes 115, 125, 165, 175 and 185 located in their respective service areas) wherein plurality of mobile device and IP client application is connected simultaneously as illustrated in Fig 4.

As to claim 70 "the method according to claim 61, wherein a plurality of Server IP applications resident on one or more Internet servers is connected simultaneously to the same server-service module" Lee discloses (Paragraph 03, The present invention relates generally to a mobile communication system, and in particular, to a method for managing mobility between heterogeneous networks using a neighbor graph (NG) in a mobile communication system comprised of IP-based

(Internet Protocol) heterogeneous networks), wherein multiple internet servers is utilized same invention and the same as above claim 69 reasoning is applied to this limitation;

As to claim 71, "The method according to claim 61, wherein the client-service module is connected simultaneously to a plurality of server-service modules " Lee discloses (Paragraph 43, As illustrated in FIG. 4, access nodes 110, 120, 160, 170 and 180 providing various services in their service areas are connected to a neighbor graph server via an IP network. The access nodes provide services requested by mobile nodes located in their respective service areas) wherein plurality of servers is connected to client server module simultaneously as illustrated in Fig 4.

As to claim 72,"A system for seamless handover of mobile devices in heterogeneous networks, in which a mobile device or the mobile network to which it belongs is moved between different topological network locations and transmits and/or receives data by means of different network access technologies without the data transfer between at least one OSI Layer 7 Client IP application, running on the mobile device, and at least OSI Layer 7 Server IP application, running on an Internet server, being interrupted, wherein an OSI Layer 7 client-service module comprise means for communicating with the at least one Client IP application and with at least one OSI Layer 7 server-service module, the at least one server-service module comprise means for communicating with the at least one Server IP application and with the client-service module", Lee

discloses (Paragraph 0053, FIG. 9 is a message flow diagram illustrating a procedure for updating a mapping table when a mobile node attempts handoff to a new access node. Referring to FIG. 9, when a mobile node determines a handoff to a new access node, the mobile node transmits a handoff request message to a new access node), wherein mobile device MN send request to access node and neighbor server as Server. According to mapping table data units sends request from node to node until reaching the designation;

"the client-service module comprises means to create one or more second data units and to send it or them to the at least one server-service module, the one or more second data units containing a client payload, received with one or more first data units from the at least one Client IP application, and a second set of headers and/or footers for each OSI Layer traversed to reach the at least one server-service module, and the at least one server-service module comprises means to create one or more third data units and to send it or them to the at least one Server IP application, the one or more third data units containing the client payload, received in one or more second data units from the client-service module, and a third set of headers and/or footers for each OSI Layer traversed to reach the at least one Server IP application." Claim 72 is rejected for the same reasoning as claim 61, Lee discloses (Paragraph 0053, FIG. 9) and According to instant application discloses in background of invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee' teaching in invention of admitted prior art data encapsulation method for a seamless handover solution using a pair of applications which re-route data without any modification of OSI protocol stack and without any modification of the Client and Server applications source code (see Page 18, lines 19-22).

As to claim 73, "The system according to claim 72, wherein the at least one server-service module comprises means to create one or more fifth data units and to send it or them to the client-service module, the one or more fifth data units containing a server payload, received with one or more fourth data units from the at least one Server IP application, and a fifth set of headers and/or footers for each OSI Layer traversed to reach the client-service module, and the client-service module comprises means to create one or more sixth data units and to send it or them to the at least one Client IP application, the one or more sixth data units containing the server payload, received in one or more fifth data units from the at least one server-service module, and a sixth set of headers and/or footers for each OSI Layer traversed to reach the at least one Client IP application" Claim 73 is rejected for the same reasoning as claim 62, Lee discloses (Paragraph 0053, Referring to Fig 9) and a instant application discloses in background of invention discloses in background of invention .

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee and teaching in

invention of admitted prior art data encapsulation method for a seamless handover solution using a pair of applications which re-route data without any modification of OSI protocol stack and without any modification of the Client and Server applications source code (see Page 18, lines 19-22).

10. Claims 63-66, 74, 76, 77 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent Application Number 005/0176429 A1) in view of admitted prior art state on page 5, lines 13-34 of the instant application and further in view of Buddhikot et al. (US Patent Application Number 2005/0012380 A1) .

As to claim 63, "The method according to claim 61, Lee and admitted prior art do not explicitly teach wherein with a sudden or planned change or update of a physical network interface currently used by the client-service module that causes a modification of the IP address currently used to exchange data with the at least one server-service module, the data transfer between the at least one Client IP application and the at least one Server IP application is suspended but kept up, in order to provide the seamless handover" ,Buddhikot discloses (Paragraph 175, Intra-domain session in the case of inter-domain mobility: If a mobile node is talking to another node in the same domain, and the mobile node moves to another domain, there can be problems, as noted above. This kind of problem happens only when there is a collision in the IP address in the new domain. These can be resolved by user intervention. The user

can choose to continue with the existing sessions and do not allow new sessions, or stop the existing sessions and start afresh. This procedurally ensures that a mobile node in one NAT domain does not have the same virtual IP address as another mobile node in a different NAT domain), wherein inter-domain session is same as to change or update of physical network interface when mobile device move . No exchange data between sessions (Client and Server) and user do not allow the new session and continue with exiting session;

"The client-service module and the at least one server-service module realize the suspension of the data transfer between the at least one Client IP application and the at least one Server IP application by stopping to forward the data units received by them" Buddhikot discloses (Paragraph 175), wherein the same as above reasoning is applied to this limitation;

" the data transfer between the at least one Client IP application and the at least one Server IP application is resumed when the client-service module has obtained a new IP address and has completed with the at least one server-service module the handshaking for the switching procedure from the old IP address to the new one" Buddhikot discloses (Paragraph 51, CN sends the packets to this virtual IP, that is received by the AN and forwarded to the actual IP of the MN and when the MN moves, its actual IP changes. Now the AN can forward the packets to the new actual IP of MN) wherein new IP address replaces the old address.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 64, Lee and admitted prior art do not explicitly teach The method according to claim 63, wherein source codes of the at least one Client IP application and of the at least one Server IP application remains Unmodified" Buddhikot discloses (Paragraph 44, Mobile NAT does not require any modifications to the access networks and therefore can be used to provide seamless mobility across heterogeneous wire line and wireless networks), wherein mobile IP address is remaining same and speed up the connection process.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 65, " Lee and admitted prior art do not explicitly teach the method according to claim 61, wherein the client-service module is installed on any additional mobile device on the same local or personal

area network as the mobile device running the at least one Client IP application", Buddhikot discloses (Paragraph 144, One embodiment 1301 (FIG. 13) separates the DHCP client and server functions 1304 from the MobileNAT client 1303 such that the client 1301 can be used by both MobileNAT 1303 and MobileIP 1305 clients as an integrated unified mobility client), wherein Fig 13 illustrates mobile IP client can be installed as unified mobile client.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 66, "The method according to claim 61, wherein the at least one server-service module is installed on an additional Internet server different from the Internet server running the at least one Server IP application", Buddhikot discloses (Paragraph 144, One embodiment 1301 (FIG. 13) separates the DHCP client and server functions 1304 from the Mobile NAT client 1303 such that the client 1301 can be used by both MobileNAT 1303 and Mobile IP 1305 Server as an integrated unified mobility client) wherein Fig 13 illustrates mobile IP client can be installed as unified mobile client.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 74, " The system according to claim 72, wherein the client-service module comprises means to detect or to plan a change or an update of a physical network interface currently used by it that causes a modification of the IP address currently used to exchange data with the at least one server-service module,

the client-service module comprises means to suspend but keep up the data transfer from/to the at least one Client IP application, in order to provide the seamless handover, by stopping to forward the data units received by it, the at least one server-service module comprises means to suspend but keep up the data transfer from/to the at least one Server IP application, in order to provide the seamless handover in case the client-service module changes its current IP address, by stopping to forward the data units received by it, and the client-service module and the at least one server-service module comprise means to resume the data transfer between the at least one Client IP application and the at least one Server IP application when the client-service module has obtained a new IP address and has completed with the at least one server-service module

the handshaking for the switching procedure from the old IP address to the new one", Claim 74 is rejected for the same reasoning as claim 63, Buddhikot discloses (Paragraph 175).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 76, "The system according to claim 72, wherein the client-service module is installed on any additional mobile device on the same local or personal area network as the mobile device running the at least one Client IP application" Claim 76 is rejected for the same reasoning as claim 65, Buddhikot discloses (Paragraph 144).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

.As to claim 77, "The system according to claim 72, wherein the at least one server-service module is installed on an additional Internet server different from the Internet server running the at least one Server IP

application. Claim 77 is rejected for the same reasoning as claim 66, Buddhikot discloses (Paragraph 144).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

As to claim 78," A computer program product comprising a computer-readable medium with computer program code means contained therein for control of one or more processors of a computer-based system for seamless handover of mobile devices in heterogeneous networks, wherein the computer program code implements a client-service module and/or a server-service module according to claim 61", The only mention of a computer –readable medium is in claim 78. The examiner interprets the term, in accordance with the knowledge of those of ordinary skill in the art, as referring to statutory mediums (e.g. memory) and not signals. Buddhikot discloses (Paragraph 10, A mobile node includes a processor, a network interface, and a storage device having computer program code therein for execution by the processor), wherein the computer program code includes a network layer for transmitting and receiving packets and an intermediate driver that transmits packets to the

network layer and receives packets from the network layer using a virtual internet protocol (IP) address to identify the mobile node.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Buddhikot provides the intermediate drive permits the actual IP address to change when the mobile node moves intra-domain or inter-domain without a corresponding change in the virtual IP address (see paragraph 10).

11. Claims 67 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent Application Number 2005/0176429 A1) in view of admitted prior art state on page 5, lines 13-34 of the instant application and in further view of O'Hara, Jr. et al. (US Patent Number 7,302,256 B1)

As to claim 67, The method according to claim 61, Lee and admitted prior art do not explicitly teach "wherein the client-service module periodically checks the mobile device, in which it is installed, for available and configurable physical network interfaces that can be used to access the at least one server-service module and creates a lookup table with the available and configurable ones", O'Hara, Jr. discloses (col. 4 ,lines 2-5, Once configured, the newly installed access elements may then provide wireless messages to other un-configured access elements which receive configuration information in the same manner. In other embodiments, the wireless discovery mechanism can be used alternatively, as a supplement

to, or as part of an enhancement to Layer 2 and 3 discovery mechanisms), wherein the access element is installed and configured to access to other layer).

"The client-service module automatically or manually changes and updates the physical network interface currently used to access the at least one server-service module on the basis of information retrieved from the lookup table" O'Hara, Jr. discloses (Paragraph 44, For example, the mobility group data can be transmitted in a discovery response, or even during the configuration phase. In addition, the central control elements may update the access elements under their respective control with the mobility group addresses associated with operational or active central control elements in that group), wherein the central control elements is the client service module and the access element is physical network interface to be updated when the information of module is changed. O'Hara, Jr. further discloses (Paragraph 44 if a central control element goes down, the other central control elements update the mobility group data stored at the access elements with the current list of active central control elements), wherein stored information will be retrieved from mobile group.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of O'Hara, Jr. provides methods, apparatuses, and system directed to a wireless discovery mechanism that

facilities the deployment and managed access elements in a wireless network system (see Col 3 lines 60-64, summary of the invention).

As to claim 75," The system according to claim 72, wherein the client-service module comprises means to periodically checks the mobile device, in which it is installed, for available and configurable physical network interfaces that can be used to access the at least one server-service module and to creates a lookup table with the available and configurable ones, and the client-service module comprises means to automatically or manually changes and updates the physical network interface currently used to access the at least one server-service module on the basis of information retrieved from the lookup table" Claim 75 is rejected for the same reasoning as claim 67, O'Hara, Jr. further discloses (Paragraph 44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of O'Hara, Jr. provides methods, apparatuses, and system directed to a wireless discovery mechanism that facilities the deployment and managed access elements in a wireless network system (see Col 3 lines 60-64, summary of the invention).

12. Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent Application Number 2005/0176429A1) in view of admitted

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prior art state on page 5, lines 13-34 of the instant application and further in view of Sarkissian et al.(US Patent Number 7,299,282 B2).

As to claim 68, "The method according to claim 61, Lee and admitted prior art do not explicitly teach "the at least one Client IP application exchanges data with the client-service module by means of a connection-oriented or connectionless first socket "Sarkissian discloses (Col. 26, lines 20-26, Session tracking also is known as one of the primary processes for tracking applications in client/server packet exchanges. The process of tracking sessions requires an initial connection to a predefined socket or port number), wherein data is exchanged between client and server;

"The client-service module exchanges data with the at least one server-service module by means of a connection-oriented or connectionless second socket; the at least one server-service module exchanges data with the at least one Server IP application by means of a connection-oriented or connectionless third socket". Sarkissian discloses (Col. 26, lines 20-26 this method of communication is used in a variety of transport layer protocols. It is most commonly seen in the TCP and UDP transport protocols of the IP protocol. During the session tracking, a client makes a request to a server using a specific port or socket number. This initial request will cause the server to create a TCP or UDP port to exchange the remainder of the data between the client and the server0,

wherein connection-orient or connectionless socket is well defined in TCP and UDP transport protocol.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's and admitted prior art teaching in invention of Sarkissian provides such a connection-oriented exchange relate to the various type of connection and maintenance message (See Col 26, lines 66-67).

Conclusion

13. The prior are made of record and not relied upon is considered pertinent to applicant's disclosures.

- U. S. Patent Application Number 6,594,279 B1 to Nguyen discloses a similar invention as recited in claim 61.
- U. S. Patent Application Number 6,304,553 B1 to Gehman discloses a similar invention as recited in claim 72.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KUO WOO whose telephone number is (571)270-7266. The examiner can normally be reached on Monday through Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abul Azad can be reached on 571-272-7599. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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